

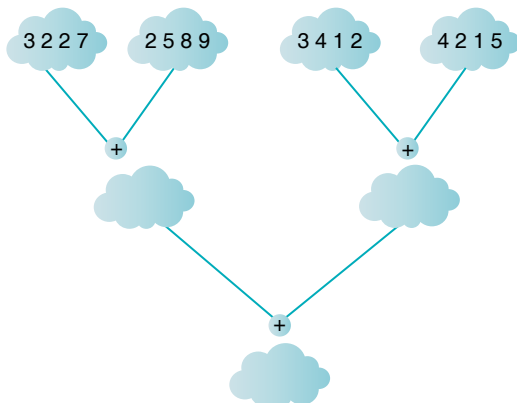
GRADE 5-6 QUESTIONS AND SOLUTIONS

Q1: The digits 6, 8, 5, 7, 0, 4, and 9 are used to form a 7-digit smallest odd natural number without repeating any digits.

According to this, which of the following options correctly represents the pronunciation of the number formed? (1 point)

- A) Four hundred fifty-six thousand seven hundred eighty-nine
- B) Four million five hundred six thousand seven hundred eighty-nine
- C) Four million fifty-six thousand seven hundred eighty-nine
- D) Four million five hundred sixty thousand seven hundred eighty-nine

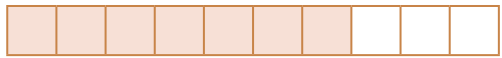
Q2:



According to the addition operations given in the figure, what number is in the bottom box? (1 point)

- A) 11446
- B) 12646
- C) 13443
- D) 14423

Q3:

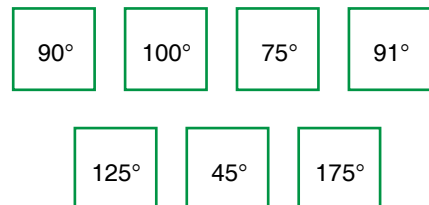


The shape above is divided into 10 equal parts.

According to this, which of the following represents the decimal modeled in the figure? (1 point)

- A) 0.07
- B) 0.7
- C) 0.77
- D) 7.0

Q4:



How many of the angles given above are obtuse angles? (1 point)

- A) 3
- B) 4
- C) 5
- D) 6

Q5: Which of the following is not a research question? (1 point)

- A) In which neighborhood is your school located?
- B) How many foreign languages do you know?
- C) What football teams do your friends support?
- D) Which subject do your friends study most frequently?

Q7:



Albert has a garden with 18 fig trees, 29 apricot trees, and 53 cherry trees.

What is the percentage of fig trees in the garden? (2 points)

- A) 9%
- B) 12%
- C) 15%
- D) 18%

Q6:



A tailor has 8 meters of fabric. The tailor used 2 meters 45 centimeters for a dress and 325 centimeters for a suit.

How many meters of fabric does the tailor have left? (2 points)

- A) 2
- B) 2.3
- C) 2.5
- D) 3

Q8: Which of the following lists contains all the natural number factors of the number 40? (2 points)

- A) 1, 2, 4, 8, 10, 20, 40
- B) 1, 2, 4, 5, 8, 20, 40
- C) 1, 2, 4, 5, 6, 8, 10, 40
- D) 1, 2, 4, 5, 8, 10, 20, 40

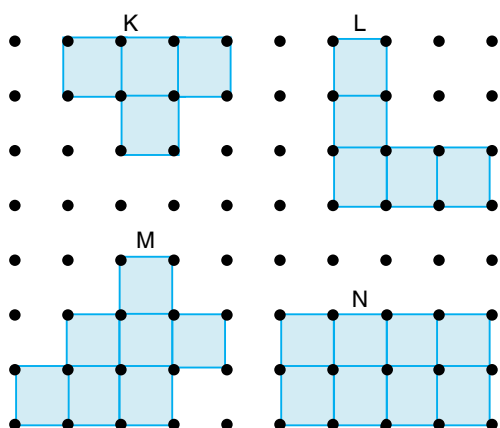
GRADE 5-6 QUESTIONS AND SOLUTIONS

Q9: The number 3 is a two-digit prime number.

How many different digits can be placed in the to form a prime number? (2 points)

- A) 2 B) 3 C) 4 D) 5

Q10:

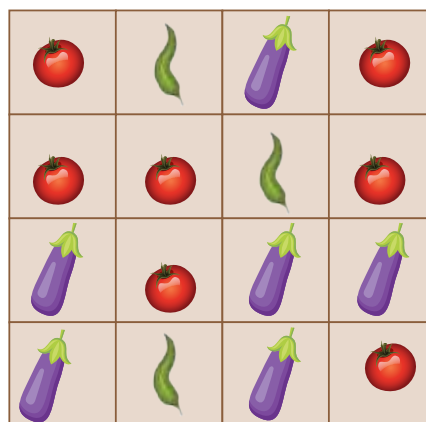


Which two of the polygonal regions given above have equal perimeter lengths?

(2 points)

- A) K – L B) M – N C) L – M D) L – N

Q11:

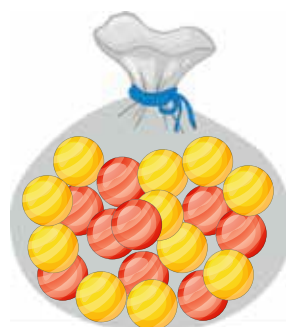


In the figure, a field is divided into equal sections, and some sections are planted with tomatoes, peppers, and eggplants.

Given that the area planted with peppers is 90 square meters, what is the total area of the entire field? (3 points)

- A) 480 B) 450 C) 420 D) 360

Q12:

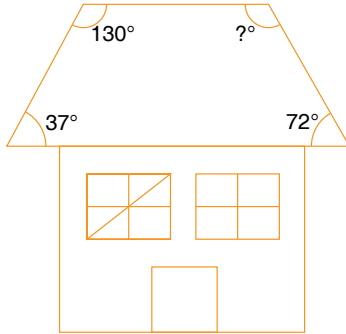


In the image, there is a bag containing yellow and red marbles. $\frac{3}{7}$ of the marbles in the bag are yellow, totaling 21.

How many red marbles are in the bag? (3 points)

- A) 9 B) 18 C) 28 D) 49

Q13:



What is the measure of the unknown angle on the roof? (3 points)

- A) 105° B) 121° C) 129° D) 135°

Q14:



A candle with a height of 30 cm loses 40% of its height after burning for a while.

What is the remaining height of the candle? (3 points)

- A) 12 cm B) 15 cm
C) 18 cm D) 21 cm

Q15: Which of the following numbers has a sum of prime factors equal to 15? (3 points)

- A) 15 B) 35 C) 70 D) 105

Q16:



In a group of 5 people, the average age is 24. The ages of 4 people are given as 18, 16, 25, and 26.

According to the given information, what is the age of the fifth person? (4 points)

- A) 27 B) 31 C) 35 D) 41

GRADE 5-6 QUESTIONS AND SOLUTIONS

Q17: The perimeter of a square with a side length of 60 cm is equal to the circumference of a circle.

What is the diameter of the circle? (Use $\pi = 3$.) (4 points)

- A) 30 cm B) 40 cm
C) 60 cm D) 80 cm

Q18:



A helium-filled balloon rises 100 meters every 20 seconds from the moment it is released.

Assuming the sea level is at zero height, what is the exact height of the balloon 5 minutes after its release? (4 points)

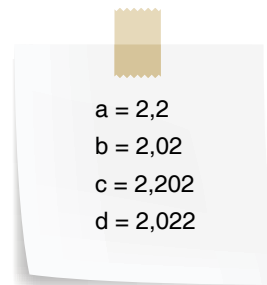
- A) 1200 B) 1500 C) 1800 D) 2000

Q19: $-31 \star 5$ is a four-digit integer.

Given that $-31 \star 5 > -3139$, how many different integers can be placed in $\star$? (4 points)

- A) 4 B) 5 C) 6 D) 7

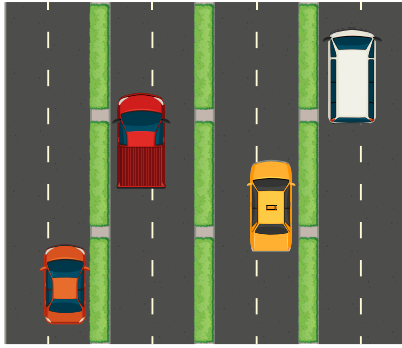
Q20:



Which of the following orderings is correct? (4 points)

- A) $a < b < c < d$ B) $b < a < c < d$
C) $b < d < a < c$ D) $a < b < d < c$

Q21:



A 4.8 km road will have poles placed every 16 meters starting from the beginning.

How many poles will be along the road? (5 points)

- A) 250 B) 300 C) 350 D) 400

Q22:

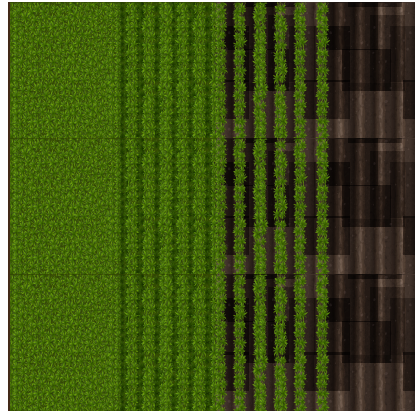


William was born on September 15, 2005, and Michael was born on August 23, 1992.

What is the age difference between Michael and William? (5 points)

- A) 13 years and 22 days
B) 13 years, 1 month, and 8 days
C) 13 years, 3 months, and 21 days
D) 13 years, 1 month, and 18 days

Q23:



The side length of a square-shaped garden with an area known to be between 150 m^2 and 250 m^2 is asked.

Which of the following cannot be the side length of this garden? (5 points)

- A) 13 B) 14 C) 15 D) 16

Q24:



A tap releases 140 mL of water per second when it is open.

If Robert brushes his teeth for 1.5 minutes with the tap open, how many milliliters of water are wasted unnecessarily? (5 points)

- A) 9600 mL B) 10800 mL
C) 12000 mL D) 12600 mL

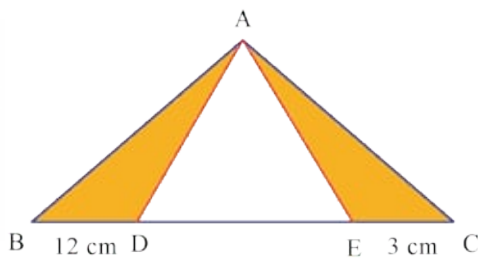
GRADE 5-6 QUESTIONS AND SOLUTIONS

Q25: The number A is 5 more than 2 times the number x. The number B is 3 less than 5 times the number x.

Which of the following expressions represents the sum $A + B$? (5 points)

- A) $3x + 2$ B) $7x + 8$
C) $3x + 8$ D) $7x + 2$

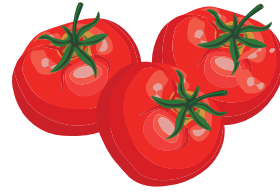
Q26:



Given the triangle $\triangle ABC$ with $BD = 12$ cm and $EC = 3$ cm, what is the ratio of the area of $\triangle ABD$ to the area of $\triangle AEC$? (6 points)

- A) 1 B) 2 C) 3 D) 4

Q27:



A greengrocer has 720 kg of tomatoes and places them into 40 boxes.

If each box contains an equal amount of tomatoes, how many kg is two-thirds of the tomatoes in one box? (6 points)

- A) 6 B) 8 C) 12 D) 18

Q28:

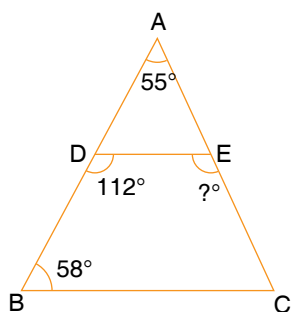


Camila's age is 3 times Tom's age and 4 years less than Hailey's age.

If Tom's age is a , which of the following algebraic expressions represents Hailey's age? (6 points)

- A) $3a - 4$ B) $4a + 2$
C) $3a + 4$ D) $4a - 2$

Q29:



Given the triangle $\triangle ABC$ where $\angle BAC = 55^\circ$, $\angle ABC = 58^\circ$, and $\angle BDE = 112^\circ$, what is the measure of $m(\angle DEC)$? (6 points)

- A) 97° B) 103° C) 107° D) 123°

Q30:

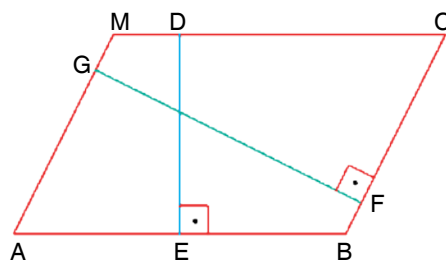


In a group, the number of girls is 4 times the number of boys. The average age of the girls is 16, and the average age of the boys is 41.

What is the average age of the entire group? (6 points)

- A) 19 B) 20 C) 21 D) 23

Q31:



Given a parallelogram ABCM with:

- $|AB| = 20$ cm,
- $|DE| = 6$ cm,
- $|FG| = 15$ cm,

Find the length of IBCI. (7 points)

- A) 8 cm B) 16 cm
C) 18 cm D) 20 cm

- Q32:** I. Multiplying a number by 0.4 is the same as multiplying it by 2 and dividing by 5.
II. Multiplying a number by 0.5 is the same as dividing it by 2.
III. Multiplying a number by a decimal number always results in a number greater than the original number.
IV. Multiplying a number by 0.2 is the same as dividing it by 5.
V. Multiplying a number by 0.25 is the same as dividing it by 4.

Determine how many of the following statements are true. (7 points)

- A) 1 B) 2 C) 3 D) 4

GRADE 5-6 QUESTIONS AND SOLUTIONS

Q33:



Olivia and her friends, during an overseas trip, visit a buffet and decide to order each of the menu items in a quantity equal to the integer part of its price.

How much did Olivia and her friends pay in total? (7 points)

- A) \$64.80 B) \$69.85
C) \$70.54 D) \$82.48

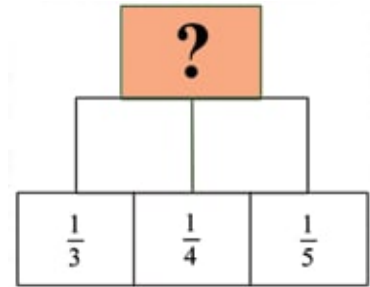
Q34:

$$\frac{1}{3} < \frac{a}{6} < \frac{10}{9}$$

Find the sum of all natural numbers a that satisfy the condition. (7 points)

- A) 12 B) 13 C) 14 D) 18

Q35:



In the given figure, each box is written as the sum of the fractions in the two boxes below it.

Which of the following fractions should be written in place of the “?” ? (7 points)

- A) $\frac{17}{24}$ B) $\frac{29}{48}$ C) $\frac{31}{30}$ D) $\frac{67}{48}$

GRADE 5-6 QUESTIONS AND SOLUTIONS

ANSWER IS C

SOLUTION:

Q1: To form the smallest possible odd number using the given digits 6, 8, 5, 7, 0, 4, 9, we need:

1. To arrange the digits in ascending order for the smallest number.
2. The last digit must be odd to ensure the number is odd.

The available odd digits are 5, 7, and 9. To make the number as small as possible, we choose 9 as the last digit.

Now, arrange the remaining digits 0, 4, 5, 6, 7, 8 in ascending order, starting with the smallest non-zero digit 4 to avoid a leading zero:

4,056,789

The number 4,056,789 is read as: Four million fifty-six thousand seven hundred eighty-nine.

The correct answer is C.

ANSWER IS C

SOLUTION:

Q2: Add 3227 and 2589:

$$3227 + 2589 = 5816$$

Add 3412 and 4215:

$$3412 + 4215 = 7627$$

Now, add the results from the first two sums:

$$5816 + 7627 = 13443$$

The answer is C.

ANSWER IS B

SOLUTION:

Q3: The bar shown in the figure is divided into 10 equal parts, and 7 of those parts are shaded.

The fraction of the shaded part is: $\frac{7}{10}$

The decimal representation of $\frac{7}{10}$ is 0.7.

The correct decimal representation is B

ANSWER IS B

SOLUTION:

Q4: An obtuse angle is an angle that is greater than 90° and less than 180° .

Let's check each angle:

- 90° is not an obtuse angle (it's a right angle),
- 100° is an obtuse angle,
- 75° is not an obtuse angle (it's an acute angle),
- 91° is an obtuse angle,
- 125° is an obtuse angle,
- 45° is not an obtuse angle (it's an acute angle),
- 175° is an obtuse angle.

The obtuse angles are: 100° , 91° , 125° , and 175° .

Thus, there are 4 obtuse angles.

ANSWER IS A

SOLUTION:

Q5: A research question is a question that can be used to gather data or information from a group or an individual and typically requires multiple answers or exploration.

Let's analyze the options:

- A) "In which neighborhood is your school located?"
— This is a specific factual question and not open-ended for research purposes. This is not a research question.
- B) "How many foreign languages do you know?"
— This can vary from person to person and could be used in research.
- C) "What football teams do your friends support?"
— This could be used to gather information from multiple individuals and is appropriate for research.
- D) "Which subject do your friends study most frequently?" — This also gathers information about habits and preferences, which can be used in research.

ANSWER IS B

SOLUTION:

Q6: First, let's convert everything to centimeters for easier calculation.

- The tailor has 8 meters of fabric:
 $8\text{ m} = 800\text{ cm}$.
- The tailor used 2 meters and 45 centimeters for the dress:
 $2\text{ m } 45\text{ cm} = 200\text{ cm} + 45\text{ cm} = 245\text{ cm}$
- The tailor used 325 centimeters for the suit.

Now, calculate the total fabric used:

$$\text{Total used} = 245\text{ cm} + 325\text{ cm} = 570\text{ cm}.$$

Now, subtract the fabric used from the total fabric:

$$\text{Remaining fabric} = 800\text{ cm} - 570\text{ cm} = 230\text{ cm}.$$

Convert the remaining fabric back to meters:

$$230\text{ cm} = 2.3\text{ m}.$$

ANSWER IS D

SOLUTION:

Q7: The total number of trees in the garden is:

$$18(\text{fig}) + 29(\text{apricot}) + 53(\text{cherry}) = 100\text{ trees}.$$

To calculate the percentage of fig trees:

$$\frac{\text{Number of fig trees}}{\text{Total number of trees}} \times 100 = \frac{18}{100} \times 100 = 18\%$$

The answer is D.

ANSWER IS D

SOLUTION:

Q8: To find all the natural number divisors of 40, we need to list all the numbers that divide 40 exactly (without leaving a remainder).

The prime factorization of 40 is:

$$40 = 2^3 \times 5$$

Now, the divisors are all the combinations of these prime factors. The divisors of 40 are:

$$1, 2, 4, 5, 8, 10, 20, 40$$

The correct list of divisors is:

$$1, 2, 4, 5, 8, 10, 20, 40$$

The correct answer is D.

ANSWER IS A

SOLUTION:

Q9: The possible two-digit numbers starting with 3 are:

30, 31, 32, 33, 34, 35, 36, 37, 38, 39

- 31 is prime.
- 32 is not prime (even number).
- 33 is not prime (divisible by 3).
- 34 is not prime (even number).
- 35 is not prime (divisible by 5).
- 36 is not prime (even number).
- 37 is prime.
- 38 is not prime (even number).
- 39 is not prime (divisible by 3).

The prime numbers are 31 and 37. The correct answer is A.

ANSWER IS D

SOLUTION:

Q10: To find the polygons with equal perimeters, we need to count the number of unit segments that make up the perimeter of each shape. Let's go through each one:

Shape K:

- The perimeter of shape K is 10 units.

Shape L:

- Shape L is an L-shaped polygon.
- Count the perimeter by following the edges:
Perimeter(L) = 12 units.

Shape M:

- Shape M is a more complex L-shape.
- Count the perimeter by following the edges:
Perimeter(M) = 14 units.

Shape N:

- Count the perimeter by following the edges:
Perimeter(N) = 12 units.

- $P(K) = 10$ units
- $P(L) = 12$ units
- $P(M) = 14$ units
- $P(N) = 12$ units

Thus, the correct answer is D) L - N because both have a perimeter of 12 units.

ANSWER IS A

SOLUTION:

Q11: The field is divided into equal sections. Looking at the grid, there are 4 rows and 4 columns, making a total of:

$$4 \times 4 = 16 \text{ sections.}$$

From the diagram, we can count the number of sections that have peppers. There are 3 sections planted with peppers.

We are given that the area of the pepper-planted sections is 90 square meters, and there are 3 pepper sections. So, the area of one section is:

$$\frac{90}{3} = 30 \text{ square meters.}$$

Since each section is 30 square meters, and there are 16 sections in total, the total area of the field is:

$$30 \times 16 = 480 \text{ square meters.}$$

ANSWER IS C

SOLUTION:

Q12: We are given that $\frac{3}{7}$ of the marbles are yellow and there are 21 yellow marbles. Let's find the total number of marbles first.

Let the total number of marbles be x . According to the problem, $\frac{3}{7} \times x = 21$.

To find x :

$$\frac{3}{7} \times x = 21$$

$$x = 21 \times \frac{7}{3} \Rightarrow 49$$

So, there are 49 marbles in total. Now, we need to find the number of red marbles. The number of yellow marbles is given as 21, so the number of red marbles is:

$$\text{Number of red marbles} = 49 - 21 = 28$$

ANSWER IS B

SOLUTION:

Q13: The sum of all angles in a quadrilateral is 360° .

Therefore, we can write $130^\circ + 37^\circ + 72^\circ + ? = 360^\circ$.

$$209^\circ + ? = 360^\circ$$

$$? = 121^\circ$$

So, the answer is B.

ANSWER IS C

SOLUTION:

Q14: The candle loses 40% of its original height.

Therefore, the remaining height will be 60% of the original height.

Original height of the candle: 30 cm.

$$\text{Height lost: } 30 \times \frac{40}{100} = 12$$

$$\text{Remaining height: } 30 - 12 = 1830 - 12$$

$$= 1830 - 12 = 18 \text{ cm.}$$

So, the answer is C.

ANSWER IS D

SOLUTION:

Q15: We need to find which of the given numbers has prime factors that sum up to 15. Let's analyze each option:

1. Option A: 15

- Prime factors of 15: 3 and 5.
- Sum: $3 + 5 = 8$.

2. Option B: 35

- Prime factors of 35: 5 and 7.
- Sum: $5 + 7 = 12$.

3. Option C: 70

- Prime factors of 70: 2, 5, and 7.
- Sum: $2 + 5 + 7 = 14$.

4. Option D: 105

- Prime factors of 105: 3, 5, and 7.
- Sum: $3 + 5 + 7 = 15$.

Answer: D) 105

ANSWER IS C

SOLUTION:

Q16: We are given the average age of 5 people as 24.
Let's denote the age of the fifth person as x . Since the average age is given as 24:

$$\text{Total age of 5 people} = 5 \times 24 = 120.$$

The ages of the 4 people are 18, 16, 25, and 26.
Their total age is:

$$18 + 16 + 25 + 26 = 85$$

$$\text{Age of the fifth person} = 120 - 85 = 35$$

Answer: C) 35

ANSWER IS D

SOLUTION:

Q17: The side length of the square is 60 cm. The perimeter P of a square is given by:

$$P = 4 \times \text{side length} = 4 \times 60 = 240 \text{ cm}$$

The circumference of the circle C is given by:

$$C = \pi \times \text{diameter}$$

According to the problem, the perimeter of the square is equal to the circumference of the circle.

Therefore:

$$240 = \pi \times \text{diameter}$$

$$\text{Diameter} = \frac{240}{\pi} = 80 \text{ cm}$$

ANSWER IS B

SOLUTION:

Q18: Calculate the total time in seconds for 5 minutes:

$$5 \text{ minutes} = 5 \times 60 = 300 \text{ seconds}$$

Determine how many 20-second intervals are in 300 seconds:

$$\text{Number of intervals} = \frac{300}{20} = 15$$

Calculate the height gained in each interval:

The balloon rises 100 meters in each 20-second interval. So, the total height gained after 15 intervals is:

$$\text{Total height} = 15 \times 100 = 1500 \text{ meters.}$$

ANSWER IS A

SOLUTION:

Q19: Given that the number is $-31 \star 5$ and it's a four-digit integer, $\star$ must be a digit from 0 to 9. The condition $-31 \star 5 > -3139$ implies:

$$-3105 - 10 \star > -3139$$

Simplifying this inequality gives: $34 > 10 \star$

Dividing both sides by 10: $3.4 > \star$

Since $\star$ must be an integer, the possible values for $\star$ are:

$$\star = 0, 1, 2, 3$$

There are 4 different integers that can be placed in $\star$.

ANSWER IS C

SOLUTION:

Q20: To compare these decimals, align their digits:

Compare a = 2.2 (or 2.200) with the others:

- $a > b$ because $2.200 > 2.020$
- $a < c$ because $2.200 < 2.202$
- $a > d$ because $2.200 > 2.022$

Compare b = 2.02 (or 2.020):

- $b < a$ as shown above.
- $b < c$ because $2.020 < 2.202$
- $b < d$ because $2.020 < 2.022$

Compare c = 2.202:

- $c > a, b$, and d as shown above.

Compare d = 2.022:

- $d < a$ as shown above.
- $d > b$ because $2.022 > 2.020$
- $d < c$ because $2.022 < 2.202$

The correct ordering is $b < d < a < c$.

ANSWER IS B

SOLUTION:

Q21: Convert 4.8 km to meters: $4.8 \text{ km} = 4800 \text{ m}$

Divide the total length of the road by the spacing between the poles:

$$\frac{4800 \text{ m}}{16 \text{ m}} = 300$$

This calculation gives us the number of intervals between poles.

Number of poles: Since the poles are placed at the start and at each interval along the road, the total number of poles placed will be exactly 300.

The answer is B.

ANSWER IS A

SOLUTION:

Q22: Subtract the years:

- $2005 - 1992 = 13 \text{ years}$.

Subtract the months:

- William's month (September) is later than Michael's month (August), so no borrowing is needed.
- $9 - 8 = 1 \text{ month}$.

Subtract the days:

- William's day (15) is after Michael's day (23), so we need to borrow 1 month (30 days).
- $15 + 30 - 23 = 22 \text{ days}$.

The age difference between Michael and William is 13 years and 22 days.

Answer: A) 13 years and 22 days.

ANSWER IS D

SOLUTION:

Q23: The area of a square is calculated as:

$$\text{Area} = \text{side length}^2$$

Check side length 13:

$$13^2 = 169 \text{ m}^2 (\text{valid, between 150 and 250})$$

Check side length 14:

$$14^2 = 196 \text{ m}^2 (\text{valid, between 150 and 250})$$

Check side length 15:

$$15^2 = 225 \text{ m}^2 (\text{valid, between 150 and 250})$$

Check side length 16:

$$16^2 = 256 \text{ m}^2 (\text{not valid, greater than 250})$$

Conclusion:

The side length that cannot be the side of the garden is D) 16.

ANSWER IS D

SOLUTION:

Q24: Convert 1.5 minutes to seconds:

$$1.5 \text{ minutes} = 1.5 \times 60 = 90 \text{ seconds}$$

Calculate the total amount of water:

- The tap releases 140 mL per second.
- Total water in 90 seconds:

$$\frac{140 \text{ mL}}{\text{second}} \times 90 \text{ seconds} = 12600 \text{ mL}$$

Robert causes 12600 liters of water to be wasted.

Answer: D) 12600.

ANSWER IS D

SOLUTION:

Q25: Express A in terms of x:

$$A = 2x + 5$$

Express B in terms of x:

$$B = 5x - 3$$

Calculate A + B:

$$A + B = (2x + 5) + (5x - 3)$$

Combine like terms:

$$A + B = 2x + 5x + 5 - 3 = 7x + 2$$

Answer: D) $7x + 2$

ANSWER IS D

SOLUTION:

Q26: Base Lengths:

- The base BD of $\triangle ABD$ is 12 cm.
- The base EC of $\triangle AEC$ is 3 cm.

Height: Since $\triangle ABD$ and $\triangle AEC$ share the same height from vertex A to base BC, the ratio of their areas depends only on the ratio of their bases.

Area Ratio: The area of a triangle is given by $\text{Area} = \frac{1}{2} \times \text{base} \times \text{height}$.

The height cancels out in the ratio:

$$\begin{aligned} \text{Ratio of areas} &= \frac{\text{Area of } \triangle ABD}{\text{Area of } \triangle AEC} = \frac{\text{Base of } \triangle ABD}{\text{Base of } \triangle AEC} \\ &= \frac{12}{3} = 4 \end{aligned}$$

The ratio of the area of $\triangle ABD$ to the area of $\triangle AEC$ is 4.

ANSWER IS C

SOLUTION:

Q27: Total Weight per Box: The total weight of tomatoes is 720 kg, and they are divided into 40 boxes. So, the weight of tomatoes in each box is:

$$\text{Weight per box} = \frac{720 \text{ kg}}{40} = 18 \text{ kg}$$

Calculate Two-Thirds of One Box: We need to find two-thirds of the weight in one box:

$$\text{Two-thirds of 18 kg} = \frac{2}{3} \times 18 = 12 \text{ kg.}$$

The answer is C.

ANSWER IS C

SOLUTION:

Q28: Camila's age is 3 times Tom's age: $3a$.

Camila's age is 4 years less than Hailey's age.

Let Hailey's age be represented by x . According to the problem: $3a = x - 4$

Rearrange the equation to isolate x : $x = 3a + 4$

The algebraic expression representing Hailey's age is C) $3a + 4$.

ANSWER IS D

SOLUTION:

Q29: Find $\widehat{ACB}$: The sum of the angles in $\widehat{ABC}$ is 180° .

So:

$$\widehat{ACB} = 180^\circ - \widehat{BAC} - \widehat{ABC}$$

$$\widehat{ACB} = 180^\circ - 55^\circ - 58^\circ = 67^\circ$$

Consider the Quadrilateral BCED: We need to find $m(\widehat{DEC})$ in quadrilateral BCED. The sum of the internal angles of a quadrilateral is 360° .

Known Angles in BCED:

- $\widehat{ABC} = 58^\circ$
- $\widehat{ACB} = 67^\circ$
- $\widehat{BDE} = 112^\circ$

Sum of the Known Angles: Add up the known angles:

$$\widehat{ABC} + \widehat{ACB} + \widehat{BDE} = 58^\circ + 67^\circ + 112^\circ = 237^\circ$$

Calculate $m(\widehat{DEC})$: Subtract the sum of the known angles from 360° to find $m(\widehat{DEC})$:

$$m(\widehat{DEC}) = 360^\circ - 237^\circ = 123^\circ$$

The correct answer is D) 123° .

ANSWER IS C

SOLUTION:

Q30: Let's say there is 1 boy. Then there would be 4 times as many girls, which means 4 girls. So, the total number of people in the group would be 1 boy + 4 girls = 5 people.

The average age of 1 boy is 41. So, the total age of all boys is 41.

The average age of each girl is 16. Since there are 4 girls, the total age of all the girls is: $16 \times 4 = 64$

The total age of the whole group is: $41 + 64 = 105$

There are 5 people in total, so the average age is:

$$\text{Average age} = \frac{105}{5} = 21$$

ANSWER IS A

SOLUTION:

Q31: Area of the Parallelogram ABCM: The area of a parallelogram can be calculated using either side and the corresponding height:

$$\text{Area} = \text{Base} \times \text{Height}$$

Calculate Area Using AB and DE: Using AB as the base and DE as the height:

$$\text{Area} = 20 \text{ cm} \times 6 \text{ cm} = 120 \text{ cm}^2$$

Calculate Area Using BC and FG: Let $|BC| = a$. Using BC as the base and FG as the height:

$$\text{Area} = a \times 15 \text{ cm}$$

Equate the Two Area Calculations: Since the area of the parallelogram is the same regardless of which side is used as the base:

$$120 \text{ cm}^2 = a \times 15 \text{ cm}$$

Solve for a :

$$x = \frac{120 \text{ cm}^2}{15 \text{ cm}} = 8 \text{ cm}$$

The answer is A) 8 cm.

ANSWER IS D

SOLUTION:

Q32: Let's evaluate each statement one by one:

I. Multiplying a number by 0.4 is the same as multiplying it by 2 and dividing by 5.

- $0.4 = \frac{2}{5}$, so this statement is true.

II. Multiplying a number by 0.5 is the same as dividing it by 2.

- $0.5 = \frac{1}{2}$, so this statement is true.

III. Multiplying a number by a decimal number always results in a number greater than the original number.

- This statement is false because if the decimal is less than 1 (e.g., 0.3), the result is smaller than the original number.

IV. Multiplying a number by 0.2 is the same as dividing it by 5.

- $0.2 = \frac{1}{5}$, so this statement is true.

V. Multiplying a number by 0.25 is the same as dividing it by 4.

- $0.25 = \frac{1}{4}$, so this statement is true.
- Statements I, II, IV, and V are true.
- Statement III is false.

There are 4 true statements.

ANSWER IS C

SOLUTION:

Q33: Each item will be ordered based on the integer part of its price:

- RICE BOX: 3 units (from 3.48)
- TACOS MENU: 3 units (from 3.35)
- MAKE IT COMBO: 7 units (from 7.15)

Calculate the total cost:

RICE BOX:

$$3 \times 3.48 = 10.44$$

TACOS MENU:

$$3 \times 3.35 = 10.05$$

MAKE IT COMBO:

$$7 \times 7.15 = 50.05$$

Add the costs:

$$10.44 + 10.05 + 50.05 = 70.54$$

Olivia and her friends have paid a total of C) \$70.54.

ANSWER IS D

SOLUTION:

Q34: To make it easier, we can multiply everything by 6 to get rid of the fractions:

$$6 \times \frac{1}{3} < a < 6 \times \frac{10}{9}$$

Simplify: Now we solve the left and right sides:

$$6 \times \frac{1}{3} = 2 \text{ and } 6 \times \frac{10}{9} \approx 6.67$$

So the inequality becomes $2 < a < 6.67$

List the Natural Numbers: The natural numbers that are between 2 and 6.67 are:

$$a = 3, 4, 5, 6$$

Add These Numbers: Now we add them up:

$$3 + 4 + 5 + 6 = 18$$

The sum of the natural numbers that satisfy the condition is 18.

So, the answer is D) 18.

ANSWER IS C

SOLUTION:

Q35: To find the value of the fraction represented by "?", we need to sum the given fractions step by step.

Calculate the sum of the first two fractions

$$\left(\frac{1}{3} + \frac{1}{4} \right):$$

Common denominator: 12

$$\text{Sum: } \frac{4}{12} + \frac{3}{12} = \frac{7}{12}$$

Calculate the sum of the second two fractions

$$\left(\frac{1}{4} + \frac{1}{5} \right):$$

Common denominator: 20

$$\text{Sum: } \frac{5}{20} + \frac{4}{20} = \frac{9}{20}$$

Calculate the sum of the second row

$$\left(\frac{9}{20} + \frac{7}{12} \right):$$

Common denominator: 60

$$\text{Sum: } \frac{35}{60} + \frac{27}{60} = \frac{62}{60}$$

$$\text{Simplify the answer: } \frac{62}{60} = \frac{31}{30}$$

Therefore, the answer is C.